



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/484,989	01/18/2000	Masami Sugimori	1232-4607	1359

7590 11/16/2004  
Morgan & Finnegan LLP  
345 Park Avenue  
New York, NY 10154

EXAMINER

JERABEK, KELLY L

ART UNIT	PAPER NUMBER
----------	--------------

2612

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/484,989	SUGIMORI, MASAMI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kelly L. Jerabek	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) 9-29 and 37-61 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 30-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/10/2004</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-8 and 30-36 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-7 and 30-36 rejected under 35 U.S.C. 103(a) as being unpatentable over Freeman US 4,774,565 in view of Saito US 5,463,419.**

Re claim 1, Freeman discloses in figure 2 an image sensing apparatus including an image sensing device (10). Freeman states that processing may be performed on a digital signal if the analog signals are converted to digital signals for processing (col. 8, lines 39-44). Therefore, an A/D conversion unit is provided to convert an analog image

Art Unit: 2612

signal outputted by the CCD (10) into a digital signal. The image sensing apparatus also includes color interpolation units (12,14,16) for performing color interpolation on the digital signal converted by the A/D conversion unit and generating image data on a plurality of color planes (Y,G,C) (col. 4, line 49 – col. 5, line 18). In addition, the image sensing apparatus includes color space conversion units (24, 26) for converting a Y,G,C color space to a color space of another colorimetric system such as (Y-G) or (C-G) (col. 5, lines 30-38). Additionally, the image sensing apparatus includes pseudo color removing units (32, 34) for reducing a color component, generated by a color interpolation unit (12,14,16) by controlling a color difference signal (Y-G, C-G) converted by a color space conversion unit (24, 26) so that pseudo color components of image data are reduced (col. 5, lines 43-51). Freeman states that imaging devices such as electronic imaging cameras can record a plurality of images on a disk or tape in either an analog or digital format (col. 1, lines 18-24). Freeman also states that reconstructed signal values that are generated from the two difference signals are used to reproduce the original image scene (col. 3, lines 10-16). Therefore, it can be seen that the reproduced image scene can be recorded on a disk or tape in an analog or digital format. Although Freeman discloses all of the limitations above he fails to include a thinning unit for thinning image data wherein the thinning process complies with a compression method and a compression unit in which that ratio of the components are changed by a thinning unit for compressing the image data in which the pseudo color components are reduced.

Art Unit: 2612

Saito discloses in figure 1 an electronic still camera to which an image processing device is applied. The camera includes an imaging device (12) and an ADC (18). Digital image signals output from the ADC (18) are written to a frame memory (22) and then applied to a YC processor (26) and the resulting signals (Y, R-Y, B-Y) are again written to the frame memory (22) (col. 5, lines 5-15). Next, an address generator (46) sequentially increments the write address in order start a thinning process and writes the selected pixels to the frame memory (22) (col. 5, lines 15-20). The thinned image data stored in the frame memory (22) is then compressed by the compander (24) and recorded to a memory card (14) (col. 5, lines 20-27). Therefore, it would have been obvious for one skilled in the art to have been motivated to include the process of thinning image signals and compressing the thinned signals in order to store them as disclosed by Saito in the digital camera capable of color interpolation as disclosed by Freeman. Doing so would provide a means for provide an image signal processing device capable of compressing an image signal in a high ratio to increase the number of shots to be stored in a memory card (Saito: col. 2, lines 14-18).

Re claim 2, Freeman discloses that the pseudo color removing unit comprises median filters (32,34) that replace a value of a pixel of interest with a substantial median pixel value of peripheral pixels of the pixel of interest (col. 5, lines 43-51).

Re claim 3, Freeman discloses that the pseudo color removing unit comprises median filters (32,34) (col. 5, lines 43-51).

Re claim 4, the color interpolation unit of Freeman generates image data (Y,G,C). However, the Examiner takes **Official Notice** that RGB image sensors are well known in the art. Therefore, depending on user specifications, if implementing an RGB sensor it would have been obvious that the interpolation means would generate image data in the R, G, and B planes that the image was captured in to produce all 3 colors for each pixel location.

Re claim 5, the color space conversion unit of Freeman converts the YGC input signal shown in figure 2 to Y-G, C-G color space. Freeman does not show an embodiment converting RGB to YUV. However, the Examiner takes **Official Notice** that RGB image sensors are well known in the art and converting an RGB signal to YUV is also well known in the art. Depending on the type of image sensor needed, if employing an RGB color filter scheme it would have been obvious to use any color space conversion method such as RGB to YUV so than an input image signal can be properly displayed or recorded in memory.

Re claim 6, the color space conversion unit of Freeman converts the YGC input signal shown in figure 2 to Y-G, C-G color space. Freeman does not show an embodiment converting RGB to Y, R-Y, B-Y. However, the Examiner takes **Official Notice** that RGB image sensors are well known in the art and converting an RGB signal to Y, R-Y, B-Y is also well known in the art. Depending on the type of image sensor

needed, if employing an RGB color filter scheme it would have been obvious to use any color space conversion method such as RGB to Y, R-Y, B-Y so than an input image signal can be properly displayed or recorded in memory.

Re claim 7, the color space conversion unit of Freeman converts the YGC input signal shown in figure 2 to Y-G, C-G color space. Freeman does not show an embodiment converting RGB to G, R-G, B-G. However, the Examiner takes **Official Notice** that RGB image sensors are well known in the art and converting an RGB signal to G, R-G, B-G is also well known in the art. Depending on the type of image sensor needed, if employing an RGB color filter scheme it would have been obvious to use any color space conversion method such as RGB to G, R-G, B-G so than an input image signal can be properly displayed or recorded in memory.

Re claim 30, see claim 1.

Re claim 31, see claim 2.

Re claim 32, see claim 3.

Re claim 33, see claim 4.

Re claim 34, see claim 5.

Re claim 35, see claim 6.

Re claim 36, see claim 7.

**Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over  
Freeman in view of Saito and further in view of applicant's conceded prior art.**

Re claim 8, Freeman in view of Saito includes all of the limitations of claim 1 above. However, Freeman in view of Saito fails to disclose a focusing unit including an infrared ray filter.

The applicant's conceded prior art shows that a focusing unit including infrared ray filters are well known in the art to provide a proper means of directing an object image to the image sensor (specification, page 1). Therefore, it would have been obvious for one skilled in the art to have been motivated to include a focusing unit such as an infrared ray filter as disclosed by applicant's admitted prior art in the digital camera capable of color interpolation as disclosed by Freeman in view of Saito. Doing so would provide a means for reducing moiré or erroneous colors in an image (specification, page 1).



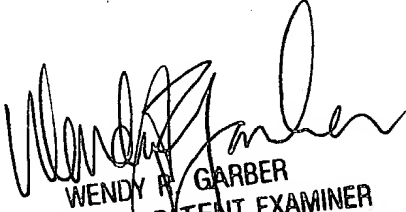
**Contacts**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly L. Jerabek whose telephone number is 703-305-8659. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for submitting all Official communications is 703-872-9306. The fax phone number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at 703-746-3059.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KLJ

  
WENDY R. GARBER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600